

Appln. No. 09/435,770
Amd. dated April 22, 2004
Reply to Office Action of February 9, 2004

REMARKS

The Office Action has been carefully studied. No claim is allowed. Claims 1, 9, and 13 presently appear in this application and define patentable subject matter warranting their allowance. Reconsideration and allowance are hereby respectfully solicited.

Claims 1-13, 57, and 58 have been rejected under 35 U.S.C. §112, first paragraph, because the examiner states that the specification, while being enabling for an isolated non-reducing saccharide-forming enzyme obtainable from *Arthrobacter* sp.S34 (FERM BP-6450) comprising an amino acid sequence as set forth in SEQ ID NO:1, does not reasonably provide enablement for any non-reducing saccharide-forming enzyme obtainable from any biological source or encoded by a DNA, any non-reducing saccharide-forming enzyme comprising an amino acid sequence having at least 70% or 80% homology to the amino acid sequence of SEQ ID NO:1, or any non-reducing saccharide-forming enzyme having an amino acid sequence comprising a part or whole of the amino acid sequence of SEQ ID NOS:1-6. This rejection is respectfully traversed.

The examiner has suggested that amending the claims to recite that the claimed enzyme comprises the amino acid sequence

of SEQ ID NO:1 may overcome the rejection. However, applicants believe that amending the claims as suggested by the examiner is too restrictive for applicants to accept. If the claims are restricted to an enzyme which comprises the amino acid sequence of SEQ ID NO:1, an enzyme which does not comprise the amino acid sequence of SEQ ID NO:1, even if the difference in the amino acid sequence is only one amino acid residue added, replaced or deleted, will not be covered by the claimed invention. It is natural, however, that one or more amino acid residues may be added, replaced or deleted accidentally in an enzyme production process or after such a production process. The examiner's suggested amendment to the claims would appear to exclude such natural mutants of the present enzyme and are therefore not acceptable to applicants.

On the other hand, it would be very easy for a person having ordinary skill in the art to obtain the microorganism of *Arthrobacter sp.* S34 (FERM BP-6450), which produces an enzyme of the presently claimed invention, and to clone a DNA which encodes an enzyme of the presently claimed invention based on the information about the nucleotide sequence disclosed in the present specification. Furthermore, it would be also quite easy for a skilled artisan, once the DNA is obtained, to produce recombinant enzymes having an amino acid sequence of SEQ ID NO:1

in which one or more amino acid residues are replaced, added or deleted by utilizing conventional recombinant techniques, such as site-specific mutagenesis, random mutagenesis, etc., which have been known to the public at the time the present invention was made. There is a high probability that an enzyme having the physicochemical properties of the enzyme of the present invention is found in the mutants which are readily produced by one of skill in the art. Applicants therefore believe that selecting such an enzyme from the thus obtained mutants is also quite routine for a person of an ordinary skill in the art and in no way requires undue experimentation.

Attached hereto are copies of Cunningham et al., *Protein Engineering*, vol-1, no.4, pp-319-325 (1987), and Holm et al., *Protein Engineering*, vol.3, no,3, pp.181-191 (1990), which show that replacing one or more amino acid residues in a given amino acid sequence, and investigating properties of thus obtained enzymes were routine experimentation at the time the present invention was made. Accordingly, the specification does indeed provide enablement for the presently claimed invention.

Reconsideration and withdrawal of the rejection are therefore respectfully requested.

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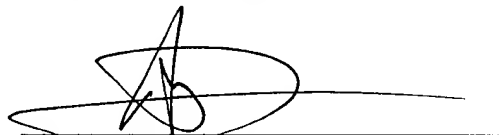
The amendments to the claims incorporate features from cancelled claims which were previously considered by the examiner, and accordingly the amendments do not raise new issues.

In view of the above, the claims comply with 35 U.S.C. §112 and define patentable subject matter warranting their allowance. Favorable consideration and early allowance are earnestly urged.

Respectfully submitted,

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A handwritten signature in black ink, appearing to be 'Allen C. Yun', is written over a horizontal line. The signature is stylized with a large loop and a crossbar.

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